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ABSTRACT

The short-range economic impact of Mercer County Community College (MCCC) upon the local community was investigated in terms of business volume, property tax revenues, and jobs for the fiscal year ending June 30, 1978. MCCC generated $6,456,979 in local business volume; approximately two-thirds of these local purchases were directly attributable to the college through the expenditures of the college, its employees, and students. Local expenditures by full-time MCCC faculty and staff alone totaled $2,334,323. The county contributed $3.4 million to the college's $12 million operating budget; of the $5 million spent by the college on goods, 30% went to local vendors. Full-time faculty and staff generated $234,397 in property taxes in the county; the business volume attributed to MCCC produced another $83,771 in business property taxes. In contrast, the value of the college's tax exemption was estimated at about $166,000. In addition, MCCC's impact on local employment was estimated in terms of a total of 886 full-time jobs held during the year; 522 were held by college faculty, staff, and students and the remaining 364 jobs were stimulated by local college-related business volume. The economic models used in the research design are presented, as is a list of the data sources. (MB)

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THE ECONOMIC IMPACT OF MERCER COUNTY COMMUNITY COLLEGE ON THE LOCAL COMMUNITY

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MERCER COUNTY COMMUNITY COLLEGE
TRENTON, NEW JERSEY

The Economic Impact of Mercer County Community College on the Local Community

by

Stanley Baum, Project Director

Funded by the Advanced Institutional Development
Title III Program (AIDP)

Office of Institutional Research
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PURPOSE AND SCOPE

The purpose of this study is to describe the effect of Mercer County Community College (MCCC) on the local economy over a fiscal year.

This economic impact study quantifies the major economic interrelationships between the College and the County. The economic impacts of MCCC on the County estimated in this study include changes in local business volume, local property tax revenues, and jobs.

The College has many types of impacts on the local community. The academic, social, and cultural impacts of the College are not considered herein; although, these impacts are central to the mission of MCCC. The economic effects examined in this report are current and short-range. Long-range economic benefits which result from better educated individuals who command higher salaries and demonstrate increased productivity are not considered, although over the long-term these increased salaries will stimulate higher spending levels and generate additional tax revenues. That type of analysis relates to the investment aspect of education--the pay-back period stretches over the years in which each college-educated individual is gainfully employed. The analysis presented in this report, however, only accounts for money spent in operating MCCC over a fiscal year in terms of salaries to college employees and college purchases of goods and services.

The results obtained in this study are conservative estimates due to the types of impacts investigated and the manner in which these estimates have been computed. Besides the range of non-economic impacts excluded from this analysis, there are a number of economic impacts that were not deemed appropriate to the study. For example, the bank deposits of college faculty and staff could be converted into bank credit in the form of mortgages and loans to local citizens. However, with the advent of branch banking, this type of analysis can be extremely difficult and unreliable. Also, the College's economic impact is measured only in terms of Mercer County. College-generated funds which are spent out-of-county and non-local tax revenues attributable to MCCC are not included. This study is geared primarily to the College's economic relationships with the County which provided 27% of the college's total revenues in FY 78.

HIGHLIGHTS

For the fiscal year ending June 30, 1978, Mercer County Community College generated $6,456,979 in local business volume. Approximately two-thirds of these local purchases are directly attributable to the College through the expenditures of the college, its employees, and the students. The remaining $2.5 million is generated by the added local business volume stimulated by the expenditure of college-related income.

Mercer County Community College had an operating budget in excess of $12,000,000 in FY 1978. Mercer County contributed $3.4 million to the College's operating budget over that period. The College spent $5,000,000 on the purchase of goods, and 30% of these purchases were made from local vendors. Local expenditures by full-time MCCC faculty and staff totalled $2,334,323. This estimate is based on 63% of the full-time faculty and staff residing locally and buying 74% of their non-housing budget items in Mercer County.

Full-time faculty and staff also generated $234,397 in property taxes in Mercer County. Hamilton Township alone received almost $60,000 in property tax revenues while East Windsor, West Windsor, and the City of Trenton each collected over $30,000 in college employee-generated residential property tax payments. In addition, the business volume attributed to MCCC produced another $83,771 in business property taxes. On the other side of the ledger, the value of the College's tax exemption is estimated as about $166,000 in Hamilton, West Windsor, and Trenton combined.

Lastly, the impact of MCCC on local employment is estimated to have totalled 886 full-time jobs in FY 78. Of this total, 522 are full-time equivalent positions held by college faculty, staff, and students; the remaining 364 local jobs are full-time positions in Mercer County stimulated by local college-related business volume.

RESEARCH DESIGN

General Approach

The research design used in this study is based primarily on the work of John Caffrey and Herbert Isaacs (Estimating the Impact of a College or University on the Local Economy, ACE, 1971). Caffrey and Isaacs derived a series of linear equations to estimate a college's impact on three segments of the local community--business, government, and individuals.

The model developed by Caffrey and Isaacs is a circular cash flow model with the college as the central element. The flow chart displayed in Figure I illustrates the type and direction of the cash flows between the college and the local community according to this model.

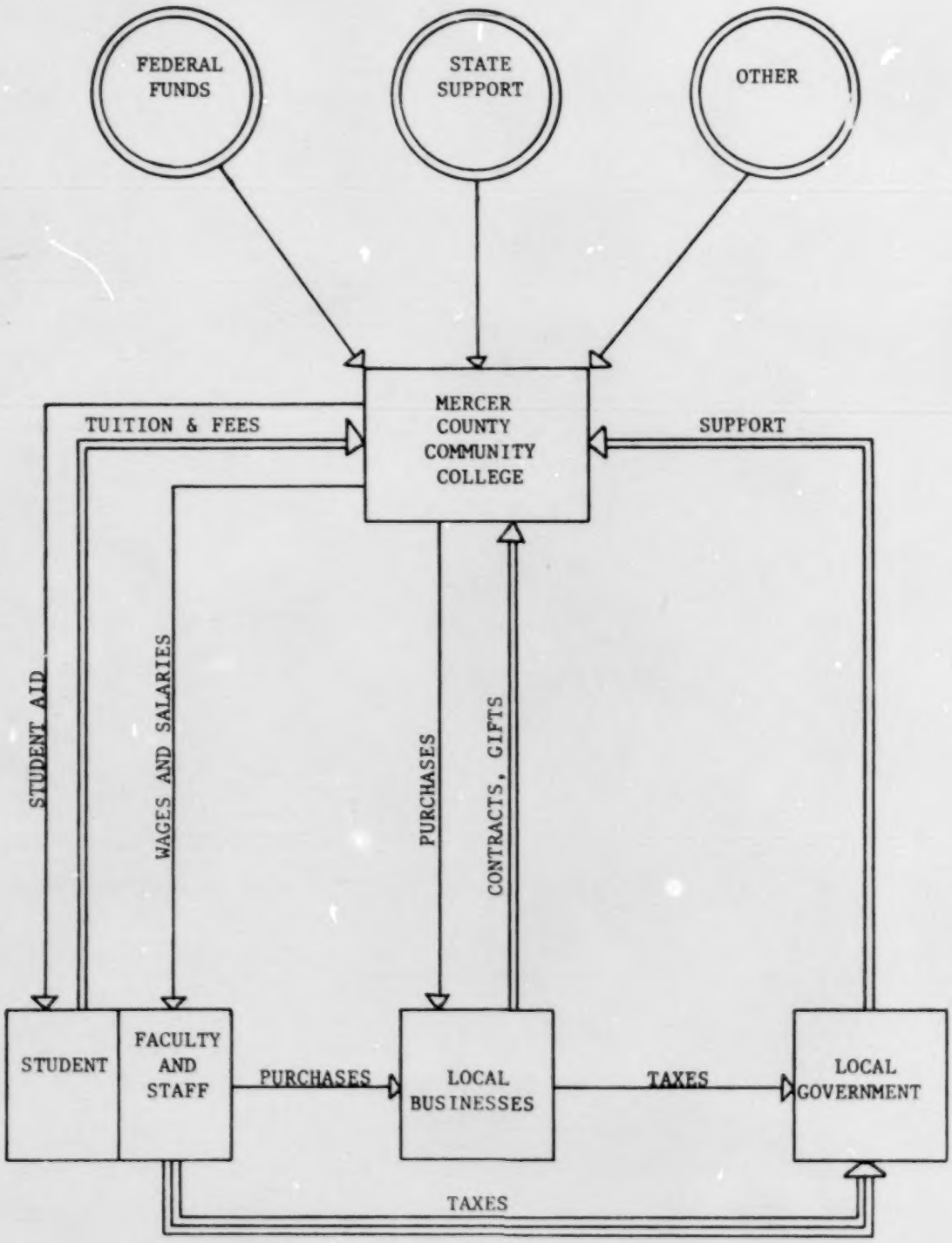
Funds enter the system as revenues to the college. These college revenues are collected primarily from students in the form of tuition and fees, and from local, state, and federal governments in the form of annual support arrangements and categorical grants. For the purposes of this study, restricted and unrestricted funds were grouped together as college revenues.

Institutional revenues are injected into the local economy through salary payments to college employees living in Mercer County and college purchases of goods and services from local businesses. Financial aid received by MCCC students is also pictured in Figure I as a college expenditure category because the college actively participates in the procurement and allocation of many of these funds.

The economic impact of MCCC is generated by the circulation of these institutional expenditures within the local economy. Local business volume is affected by college purchases of goods and services from local vendors, and the purchases of full-time faculty and staff and financial aid students from local firms. College purchases from vendors outside of Mercer County and faculty, staff, and student purchases made outside of the County are considered leakages to the system and are not included in a local impact study. In accordance with Keynesian economic theory, a multiplier is used to show the extent to which an initial change in spending will lead to a change in income greater than the original change in spending due to the circular flow of income.

FIGURE I

ECONOMIC IMPACT CASH FLOW MODEL

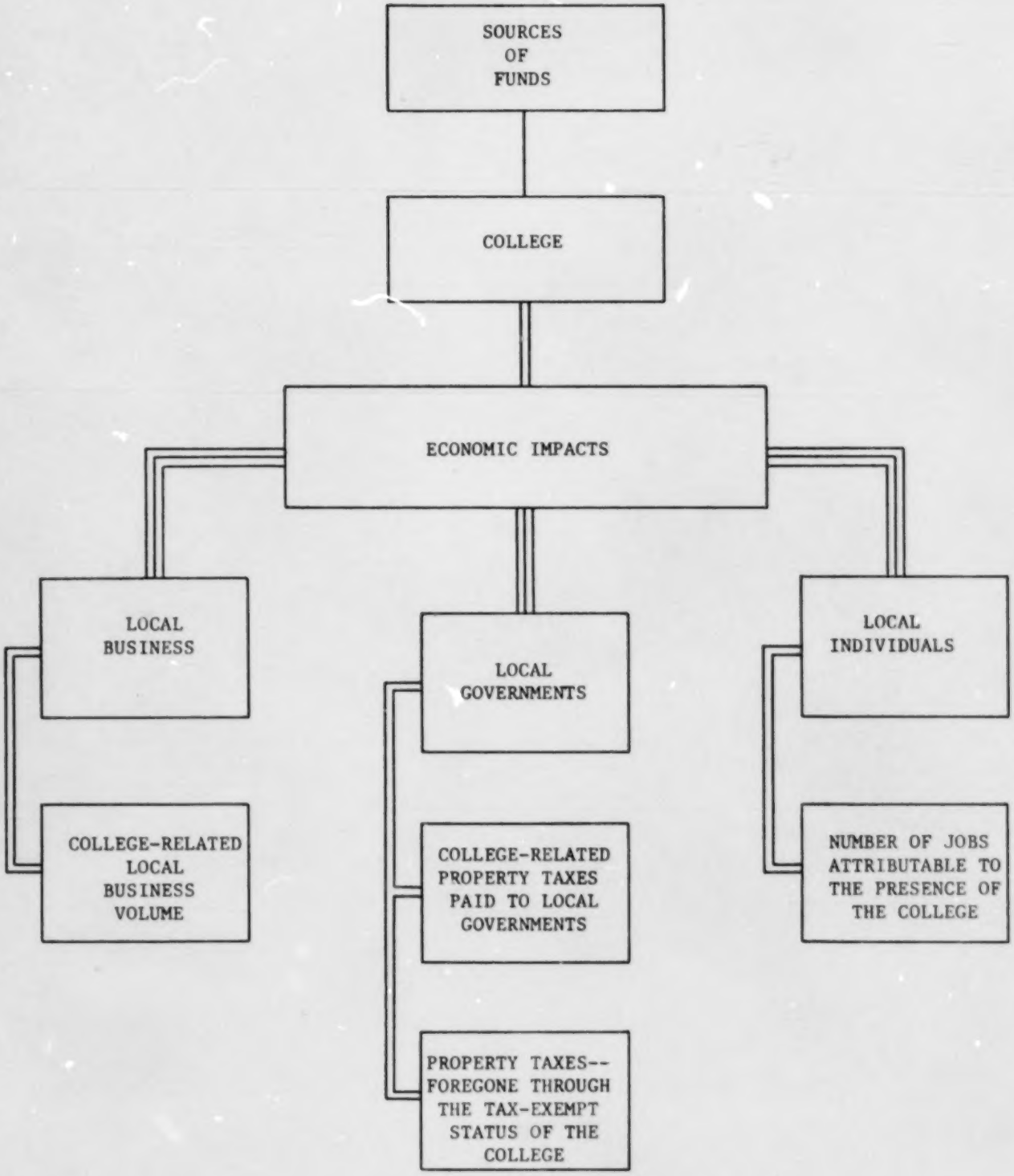


Business volume attributable to MCCC also generates additional jobs, personal income and tax revenues. Property tax receipts attributable to the college include the property tax payments of faculty and staff, and the taxes paid by businesses for college-generated volume. Local business volume generated by MCCC also has an impact on local employment and personal income in addition to the college's payroll.

The estimated magnitudes of these economic impacts are displayed in Figure 2. The models are divided into three segments of the community--local business, local government, and local individuals. Each model estimates a particular impact of the College on the economic condition of Mercer County and represents one or more mathematical equations, computations, and/or data collection tasks. The types of impacts which can be measured by these models are quite extensive and diverse. Therefore, the results of these models cannot be added together to yield one "positive" or "negative" figure. As a group, however, the models shown in Figure 2 quantify the major economic interrelationships between MCCC and Mercer County.

FIGURE II

ECONOMIC IMPACT STUDY MODELS


SOURCES OF FUNDS
COLLEGE
ECONOMIC IMPACTS
LOCAL BUSINESS
LOCAL GOVERNMENTS
LOCAL INDIVIDUALS
COLLEGE-RELATED LOCAL BUSINESS VOLUME
COLLEGE-RELATED PROPERTY TAXES PAID TO LOCAL GOVERNMENTS
NUMBER OF JOBS ATTRIBUTABLE TO THE PRESENCE OF THE COLLEGE
PROPERTY TAXES--FOREGONE THROUGH THE TAX-EXEMPT STATUS OF THE COLLEGE

LOCAL BUSINESS (B - 1)

The economic impact of Mercer County Community College on local business volume is estimated by the following series of models. College-related business volume is generated by the expenditures of the College, its faculty and staff, and students. The impact of MCCC on local business volume is divided into the local expenditures of each of these groups for goods and services and the added expenditures stimulated by those initial purchases. The mathematical expression for these calculations is shown below:

Model B-1

College-Related Local Business Volume (BV_{CR})

$$BV_{CR} = (E_L)_C + (E_L)_F + (E_L)_S + (BV_I)_{CR}$$

$(E_L)_C$ = Local expenditures by the College

$(E_L)_F$ = Local expenditures by full-time faculty and staff

$(E_L)_S$ = Local expenditures by students

$(BV_I)_{CR}$ = Local business volume stimulated by the expenditure of college-related income.

College Expenditures (B-1.1)

Model B-1.1 estimates the dollar value of all purchases by MCCC for goods and services from local businesses.

Model B-1.1

Local Expenditures by the College $(E_L)_C$

$$(E_L)_C = (e_L)_C (E_C - W_{F,S} - XF_C - R_C)$$

$(e_L)_C$ = Proportion of total college expenditures that are local, excluding compensation, internal items, and taxes

E_C = Total college expenditures

$W_{F,S}$ = Gross compensation to faculty, staff and students

XF_C = Internal account transfers and payments

R_C = Taxes and other payments to governments.

Model B-1.1 analyzes the College's expenditure budget as to the dollars which are spent on purchasing goods and services and then adjusts this total by the proportion made from local vendors. Total College purchases for goods and services are derived by "netting out" non-business expenditure items such as taxes, wages, and internal account transfers from the MCCC budget. The proportion of College purchases made locally is then applied to the total College purchasing budget to yield an estimate of the local expenditures by the College $(E_L)_C$.

Faculty and Staff Expenditures (B-1.2)

Model B-1.2 estimates the amount of local expenditures made by full-time faculty and staff.

Model B-1.2

Local Expenditures by Faculty and Staff $(E_L)_F$

$$(E_L)_F = (E_H)_F + (E_{NH})_F + (E_L)_{NLF}$$

$(E_H)_F$ = expenditures by faculty and staff for local housing

$(E_{NH})_F$ = local non-housing expenditures by local faculty and staff

$(E_L)_{NLF}$ = local expenditures by non-local faculty and staff

Model B-1.2 separates local purchases by College faculty and staff into expenditures on housing and non-housing items. For those faculty and staff residing locally, both housing and non-housing expenditures are considered in the calculations. For those college employees who live outside Mercer County, only their non-housing expenditures are included in this model.

Local Non-Housing Expenditures (B-1.2.1)

(Retail Gravity Model)

The Retail Gravity Model estimates the proportion of total non-housing expenditures that an individual is likely to make in his or her local environment. The gravity model assumes that the amount of non-housing expenditures is inversely proportional to the square of the distance to the point of purchase. The basic equation for these calculations is shown below.

Model B-1.2.1

The Proportion of Local Non-Housing Expenditures by Faculty and Staff (e_L)

$$e_L = \frac{\frac{RS_L}{D_L^2}}{\frac{RS_L}{D_L^2} + \frac{RS_{N1}}{D_{N1}^2} + \frac{RS_{N2}}{D_{N2}^2} + \ldots + \frac{RS_{Nn}}{D_{Nn}^2}}$$

e_L	=	proportion of non-housing expenditures made locally
RS_L	=	total retail sales of local area
D_L	=	average distance a person travels for a local purchase
RS_{Nn}	=	total retail sales in n^{th} competing community

The probability of a college employee making a local purchase is proportional to the total amount of retail sales in the area and inversely proportional to the square of the distance to the point of the purchase.

The retail gravity model was originally developed to study local shopping center patterns. The primary application of this model was to assess the need for additional shopping facilities in a particular locality. The gravity model has since been included in the design of many economic impact studies with the confidence that it yields a fair estimate of the shopping patterns of local consumers.

Local Business Volume Stimulated by the Local Purchase of MCCC, Its Faculty, Staff and Students. (B-1.4)
(The Multiplier Effect)

Model B-1.4 measures the indirect growth in business volume related to the presence of MCCC.

Model B-1.4
The Multiplier Effect

$$(BV_I)_{CR} = Mi\ (E_L)_{CR}$$

Mi = income-expenditure multiplier
$(E_L)_{CR}$ = College related local expenditures

College-related local expenditures, $(E_L)_{CR}$, represents the sum of the expenditures by the college, faculty, staff and students calculated in Models B-1.1 through B-1.3. The income-expenditures multiplier, Mi measures the extent to which an initial change in spending, $(E_L)_{CR}$, will lead to a change in income greater than the original change in spending.

$(E_L)_{CR}$ represents the direct impact, or first round-effect of the college on local business volume. As a result of this initial impact, local businesses restock their supplies and hire additional employees to handle the added volume. The wages paid these additional employees and their subsequent expenditure of those funds initiates a recycling process which represents the indirect impact of the College and is approximated by the multiplier.

The theoretical formulation for the income-expenditures multiplier is as follows:

$$\text{multiplier} = \frac{1}{1-MPC}$$

MPC = marginal propensity to consume

This formulation shows that the larger the propensity of an individual to consume the greater will be the impact on income and expenditures. This formula was developed for a closed economic system. For a local area study the formula is revised to reflect leakages from the system.

Mi = 1 + [1 - (proportion of personal income spent in the local area (1 - proportion of business spending going out-of-county))]

LOCAL GOVERNMENT

The following group of models estimate the effect of MCCC on the local property tax base. The College generates property tax revenues through the payments of its faculty and staff and through the business property committed to college-related business volume. County tax revenues foregone because of the tax exempt status granted a public institution of higher education are also examined in this section.

COLLEGE-RELATED REVENUES RECEIVED BY MERCER COUNTY (G-1)

Tax Revenues from Faculty and Staff (G-1.1)

Model G-1.1 estimates the amount of property tax receipts generated by local faculty and staff.

Model G-1.1

Real Estate Taxes Paid to Local Government by Local Faculty and Staff $(R_{RE})_F$

$$(R_{RE})_F = F_L \frac{(V_{PR})}{(N_{PR})} \quad (pt)$$

F_L = number of faculty and staff residing in locality
pt = local property tax rate
V_{PR} = total assessed valuation of all local private residences
N_{PR} = total number of local private residences

Model G-1.1 assumes that college faculty and staff own houses of average value in their local community, $\frac{V_{PR}}{N_{PR}}$. The estimate produced by this model is made more precise by sub-dividing the county into townships and computing the tax revenues for each township separately. Thus, the average value of a private residence is taxed at the local rate and multiplied by the number of college employees residing in the locality to yield an estimate of residential property tax receipts.

College-Related Local Business Taxes (G-1.2)

Model G-1.2 estimates the amount of property tax receipts generated by college-related business volume.

Model G-1.2

Real Estate Generated by College-Related Business Volume $(R_{RE})_{CB}$

$$(R_{RE})_{CB} = \frac{(BV_{CR})}{(BV_L)} \quad (R_{RE})_{LB}$$

BV_{CR} = College-related local business volume (Model B-1)
BV_L = Local business volume
$(R_{RE})_{LB}$ = Total real estate taxes generated by local businesses

Model B-1.2 assumes that the proportion of total local business property taxes generated by college related business is equal to the proportion of total local business volume attributed to the college. The proportion of total local business volume attributed to MCCC is represented by the ratio $\frac{(BV_{CR})}{(BV_L)}$, where the value of BV_{CR} is computed in Model B-1. The value of college-related local business taxes equals that percentage of the total local business taxes $(R_{RE})_{LB}$ represented by the ratio $\frac{(BV_{CR})}{(BV_L)}$.

REAL ESTATE TAXES FOREGONE THROUGH THE COLLEGE'S TAX EXEMPT STATUS (G-2)

MCCC is a tax-exempt institution, therefore any estimate of taxes foregone is hypothetical in nature. However, since Model G-1 estimates the amount of tax revenues generated by the College, it is also necessary to estimate the amount of taxes foregone because of the College. This is done in Model G-2.

Model G-2

Value of Property Tax Exemption $(R_{RE})_C$

$$(R_{RE})_C = \frac{(R_{RE})}{A_L} \quad A_C$$

R_{RE} = Property tax revenues from local property owners
A_L = Total local community acreage
A_C = College acreage

The basic assumption employed in Model G-2 is that the property tax yield from the land on which the college is located would be equal to other land in the local area of similar size. In effect this method imputes a tax bill to the college by prorating both land and business taxes on the basis of land area. This method further assumes that college land values are equal to other land values in the taxing jurisdiction.

The proportion R_{RE}/A_L yields a property tax rate per unit of land area in the local community. This unit tax rate is then applied to the land area of the College, "A_C", to yield an imputed property tax bill for the land on which MCCC is located.

LOCAL INDIVIDUALS

The final model estimates the impact of MCCC on the employment of local individuals.

EMPLOYMENT (I-1)

The number of jobs attributed to the presence of MCCC includes the employment positions at the college and those created as a result of local college-related expenditures.

Model I-1

Number of Local Jobs Attributable to the Presence of the College (J_L)

$$J_L = F + S + (j)\ (E_L)_{CR}$$

F = total number of faculty and staff

S = total number of College work-study students

j = full-time jobs per dollar of direct expenditures in the local economy

$(E_L)_{CR}$ = college-related local expenditures (Model B-1.1)

The number of employment positions at MCCC include faculty, staff, and student work-study recipients. The number of jobs created by college-related expenditures is dependent on the size of the employment multiplier. The employment multiplier measures the marginal change in local employment associated with a change in local business volume. The impact of MCCC on local business is estimated by Model B-1.

STUDY FINDINGS

COLLEGE BUDGET INFORMATION

Mercer County Community College collected a total of $12,327,047 in revenues in fiscal year 1978. Table 1 displays these College revenues by amount and major source. Both restricted and unrestricted funds are included in these figures.

Table 1

MCCC Revenues for FY 78 - By Source

Source	Amount	% of Total Revenues
Student Tuition & Fees	$2,551,208	21%
Federal	1,600,927	13%
State	4,288,897	35%
Local	3,363,799	27%
Other	522,216	4%
TOTAL	$12,327,047	100%

College revenues are injected into the economy through salary payments to college employees and college purchases for goods and services. Of the College's $12 million revenue total for FY 1978, purchases of goods and services totalled $5,035,810, while the remaining $7,291,237 was paid to college employees in wages and salaries.

LOCAL BUSINESS

The College is estimated to have generated $6,456,979 in local business volume during FY 1978. This total includes the direct expenditures of the College, its faculty and staff, financial aid students, and the additional income stimulated by these initial expenditures.

$(E_L)_C$ = Local expenditures by the College	$1,510,743
$(E_L)_F$ = Local expenditures by faculty and staff	2,334,323
$(E_L)_S$ = Local expenditures by financial aid students	702,102
$(BV_I)_{CR}$ = the business volume stimulated by the expenditures of college-related income by local individuals other than faculty, staff, or students.	1,909,811
BV_{CR} = College-related local business volume	$6,456,979

Local Expenditures by the College $(E_L)_C$

Local college purchases are dependent on the total amount of college expenditures of goods and services and the proportion of these expenditures made from local vendors. Non-salary expenditures in FY78 totalled $5,035,810 according to budgeted figures provided by the MCCC Accounting Office.

The proportion of in-county purchases by the College is approximately 30%.[1] This estimate was computed through a random sampling of the records of the MCCC Purchasing Office. This random sampling was accomplished by examining every fifth vendor file and recording the amount of the latest invoice. In this manner, vendors and purchase amounts were classified as in-county or out-of-county yielding a proportion based on purchase volume.

College Purchases for Goods and Services	$5,035,810
Proportion of In-County Purchases	30%
$(E_L)_C$ = Local College Purchases for Goods and Services	$1,510,743

[1] The College has very little control over this percentage because all purchases of significant volume are subject to public bid.

Local Expenditures by Faculty and Staff $(E_L)_L$

Model B-1.2 estimates the impact of college faculty and staff on local business volume. The expenditure patterns of individual households were derived from Three Standards of Living for an Urban Family of Four Persons. This annual publication of the U.S. Bureau of Labor Statistics presents a high, low, and intermediate household budget. The MCCC Computer Center provided a salary distribution of college employees to compare with the BLS budget levels. The expenditures of faculty and staff personnel for housing and non-housing items can be specified from this information.

In order to estimate the proportion of faculty and staff expenditures spent in the local area, the Computer Center provided the study with a distribution of full-time college employees by zip code and annual salary. For those faculty and staff residing locally, expenditures were divided into housing and non-housing purchases. The proportion of non-housing purchases made locally by college employees living in Mercer County was estimated by the retail gravity model.

The retail gravity model determines the probability of making a local purchase given the retail drawing power of the surrounding communities. The gravity model describes the surrounding communities as those counties between New York City and Philadelphia. The retail sales of the counties in the New York-Philadelphia corridor were obtained from Sales Management Magazine's Annual Survey of Effective Buying Power. The input data for the retail gravity model is presented in Appendix Table A.

Local Expenditures by Local Faculty and Staff $(E_L)_F$	= Housing Expenditures	+	Non-Housing Expenditures	X (% of local non-housing expenditures)
	= $756,224	+	$2,132,566 (.74)	
	= $2,334,323			

Local Expenditures by Students

The total amount of student expenditures supported by federal, state, and private financial aid dollars was reported as $1,210,150 by the MCCC Office of Student Financial Aid. The Financial Aid Office also provided a set of student budgets used by the office in the calculation of individual award amounts. These budgets were used in the study to separate student expenditures into housing and non-housing items. The percentage of students residing in Mercer County (86.2%) was obtained from the MCCC Fact Book. The proportion of student spending done locally is generated by the retail gravity model.

Local Expenditures by Local Students $(E_L)_S$ = Housing Expenditures + Non-Housing Expenditures X (% of local non-housing expenditures)

= $224,227 + $645,709 (.74)

= $702,102

Local Business Volume Stimulated by the Local Purchase of MCCC, Its Faculty, Staff, and Students (The Multiplier Effect)

The local expenditures of the College, faculty, staff and students are directly responsible for a $4,547,168 increase in Mercer County business volume. The multiplier measures the indirect effect of these expenditures or the extent to which local spending is stimulated in response to an initial change in business volume. The size of the multiplier for Mercer County is dependent on the proportion of personal income spent on local consumption and the percentage of business spending done in-county.

The proportion of personal income spent on local consumption was computed by combining the Three Standards of Living for an Urban Family for Four Persons with the income distribution for Mercer County households to yield a "consensus" budget for the county. The income distribution of Mercer County households was obtained from the data published in the "1975 County Summary" Office of Business Economics, Department of Labor and Industry. The proportion of

personal income spent on consumption items (housing and non-housing) is computed to be 79.7% for Mercer County residents. The proportion of consumption made by Mercer County residents in the county was determined by the retail gravity model as being 74%.

The proportion of business spending done in-county is estimated as 50%, based on census data and data from the college. The 1970 Census shows that 70% of the employees of Mercer County live in the County. Combined with the fact that 70% of the College's purchases were made out-of-county, an estimate of 50% appears appropriate if not slightly conservative.

The calculation of the multiplier is shown below:

Mi = 1 ÷[1-(proportion of personal income spent in the local area
(1 - proportion of business spending going out-of-county))]
= 1 (1 - .797 (.74) (1 - .5))
= 1.42

Mercer County collected $315,319 in property tax revenues in 1977 which can be attributed to the presence of MCCC. $234,397 of this total w re contributed by faculty and staff residing in Mercer County. The remaining $80,922 was generated by local business properties committed to college-related expenditures. This section also estimates that the College's tax exemption was worth $111,062 in 1977.

COLLEGE-RELATED REVENUES RECEIVED BY MERCER COUNTY (G-1)

Local Faculty and Staff $(R_{RE})_F$

The property taxes generated by local faculty and staff are estimated by computing the average property tax bill paid by local households and applying this average to the number of college employees residing locally. The property taxes paid by local individuals for housing include both residential and apartment taxes. Since property values and general tax rates vary widely across Mercer County, data for this model was aggregated at the township level.

The Mercer County Board of Taxation provided 1977 data on the assessed valuation of all apartment and residential properties in the county, and the general tax rate for each township and municipality. The total number of households in each taxing jurisdiction was derived from 1976 data published in Sales Management Magazine and Population Estimates for New Jersey (Department of Labor and Industry). The number of full-time faculty and staff residing in each locality was obtained from institutional records.

	Full-time Faculty & Staff	Property Taxes Per Household	Estimated Property Taxes Paid by MCCC Faculty & Staff
E Windsor	29	$1,101	$31,917
Ewing	21	887	18,629
Hamilton	81	737	59,729
Hopewell	14	1,221	17,097
Lawrence	17	883	15,012
Princeton	18	1,344	24,183
Trenton	71	423	30,033
Washington	6	767	4,600
W Windsor	21	1,581	33,197
	278	$ 843	$234,397

College-Related Local Business $(R_{RE})_{CB}$

Real estate taxes attributed to college-related local business is estimated by computing the proportion of total county business volume attributed to the college and applying this percentage to the total property taxes paid by local business concerns. The amount of local volume attributed to the College is estimated as $6,456,979 in Model B-1. Total business volume in Mercer County was derived from wholesale, retail, and manufacturing data published in the U.S. Economic Census, Sales Management Magazine and the Annual Survey of Manufacturer's, respectively. The total amount of business taxes paid to the County includes both industrial and commercial properties; this information was also provided by the Mercer County Board of Taxation.

College-Related Local Business Taxes = $\frac{\text{College-Related Local Business}}{\text{Total Local Business Volume}} \times \text{Total Local Business Taxes}$

= $\frac{\$6,446,797}{\$2,996,250} \times \$37,559,193$

= $ 80,922

REAL ESTATE TAXES FOREGONE THROUGH THE COLLEGE'S TAX EXEMPT STATUS (R_{RE} C)

Any estimate of the value of MCCC's tax exempt status is hypothetical in nature because the land on which the college is located might have been put to any number of uses. Model G-2 assumes that the college's land would have been developed similarly to the land surrounding it.

MCCC is located in parts of three localities - West Windsor, Hamilton, and the City of Trenton. For each of these three localities, a total tax bill was computed and divided by the locality's total acreage yielding an average property tax per acre of land. All classes of property are included in these calculations - residential, apartment, industrial, and commercial. Lastly, the amount of acreage occupied by the College is applied to the property tax per acreage in each of the localities.

The method described above is illustrated in the following calculations.

		Hamilton	Trenton	W Windsor
1.	Total Value of Land and Improvements	$1,032,007,600	326,700,410	130,662,600
2.	General Tax Rate	2.55	7.89	5.02
3.	Total Property Tax (1) X (2)	26,316,193.80	25,776,662.35	6,559,262.52
4.	Total Acreage of Township[1]	24,192	4,791	16,891
5.	Property Tax per Acre (3) (4)	1,087.67	5,380.23	388.33
6.	Size of College Property in Acres	6	9	286
7.	College Tax Exemption	6,526.02	48,422.07	111,062.38

[1] Not including college property.

LOCAL EMPLOYMENT

Local jobs attributed to MCCC include positions held by faculty, staff, and students at the College, in addition to jobs generated by college-related business volume. Caffrey and Isaacs (Estimating the Impact of a College or University of the Local Economy) suggest a range of .00007 - .00009 man-years of employment per dollar of local expendit res In other words, a change of one million dollars in local purchases increases local employment by 70 - 90 jobs. For the purpose of this study, 80 jobs per one million dollars of local purchases is used.

Full-time Faculty and Staff	441
Part-time Faculty (FTE's)[1]	30
Work-Study Students (FTE's)	51
Total Employment Positions at MCCC	522
Local Jobs Stimulated by College-Related Expenditures	364
Total Local Jobs Attributed to MCCC	886

1 Full-time equated

CONCLUDING REMARKS

Mercer County Community College is a vital economic force in the county. In addition to the direct impact of a $12,000,000 operating budget on local business and employment, the college stimulates additional business and local employment through the expenditure of college-related income. These indirect effects are also very significant. It should also be recognized that a large proportion of the institution's expenditures are supported by revenues collected from state and federal sources. The presence of the college attracts large amounts of outside funding into the county.

The impact of the College is felt in all parts of Mercer County. The business volume stimulated by the College, although not specified in the study, is centered in the areas surrounding the College's two campuses where the majority of local faculty and staff reside. Similarly, the jobs and business property taxes attributed to the College are concentrated in West Windsor, Trenton, and Hamilton. In contrast, except for the heavy concentration of college personnel living in Hamilton and Trenton, faculty and staff are evenly distributed throughout Mercer County. Therefore, the economic impact of the College is also spread across Mercer County.

The College's economic impact is not limited to Mercer County alone, there are substantial spill-overs into the neighboring community. However, since this study is only concerned with MCCC's economic relationship with its home county, these spill-overs are considered to be leakages from the system. The extent to which these leakages re-enter the county in terms of added local business volume in Mercer is not traced in this study. Similarly, the impact of non-local college faculty and staff on local business volume is not included in this analysis.

The factors discussed in the preceding paragraph were not accounted for because of difficulties in obtaining reliable estimates. The findings reported herein are derived from reliable data sources according to procedures which have been validated for college use. Although the author is confident that these estimates are fair ones, to ensure the credibility of the study, its results are probably on the conservative side.

DATA SOURCES

Mercer County Community College Offices

Accounting Office - College budget data

Facilities, Planning/Physical Plant - College land area

Purchasing Office - College purchases from local vs. non-local vendors

Student Financial Aid Office - Student budgets, financial aid dollars and aid recipients

Computer Department - Faculty and staff salary distribution and residential patterns

Mercer County Offices

Board of Taxation - Tax rates and property values for Mercer County and its townships

Planning Board - Municipal land areas

Published Data

The Fact Book, MCCC - Student residency patterns

County Business Patterns, U.S. Bureau of the Census (1975) - Annual payroll of County businesses

1972 Economic Census, U.S. Bureau of the Census - Mercer County wholesale trade

Annual Survey of Manufacturer's, U.S. Bureau of the Census - Mercer County manufacturing volume

An Economic Profile of Mercer County, N.J. Department of Labor and Industry (1978) - Commuting patterns

Population Estimates for New Jersey July 1, 1976, N.J. Department of Labor and Industry - Mercer County population by municipality

New Jersey Economic Indicators, June 30, 1977, N.J. Department of Labor and Industry - Budgets for a family of four

1975 County Data Summary. N.J. Department of Labor & Industry - Household incomes of Mercer County residents

Sales Management Magazine, July 25, 1977 - Mercer County retail sales; Number of households in Mercer County

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John Caffrey and Herbert Isaacs. Estimating the Impact of a College or University on the Local Economy. Washington, D.C.: American Council of Education, 1971

Richard Howard. "The Impact of Potomac State College on the Keyser/Mineral County Community." Morgantown, W.Va.: Office of Institutional Research West Virginia University, 1976.

James Phillips. Economic Impact of Community Colleges on Local Economy. Cypress College, Cypress, Calif. 1977.

James W. Selgas. The Impact of the College on the Local Economy. Harrisburg Area Community College, Pa. 1973.

Tayloe Murphy Institute. Economic Impact of University of Virginia on the Community. Charlottesville, Va.: Tayloe Murphy Institute of University of Virginia, 1973.

Norval Wellsfry. The Economic Impact of the Virginia Community College System 1966 to 1974. Virginia Polytechnic Institute and State University, Blacksburg, Va. 1976.

APPENDIX TABLE A

INPUT DATA FOR THE RETAIL GRAVITY MODEL

	Name of County	Average Distance From Mercer (Mi)	Retail Sales ($000)
N.J.	Cape May	76.6 Miles	$ 279,912
	Cumberland	65.4	416,420
	Atlantic	55.2	584,214
	Salem	57.9	141,744
	Gloucester	44.5	415,454
	Camden	34.8	1,633,790
	Burlington	27.3	1,090,910
	Ocean	32.7	961,410
	Monmouth	22.0	1,566,112
	Middlesex	20.4	1,877,527
	Somerset	17.7	741,276
	Hunterdon	20.9	228,633
	Warren	42.3	245,305
	Morris	39.7	1,264,994
	Sussex	57.9	255,908
	Passiac	55.2	1,580,518
	Essex	42.3	2,417,664
	Bergen	56.8	3,060,302
	Hudson	45.0	1,399,705
	Union	33.2	1,627,543
PA.	Chester	60.0	753,954
	Delaware	42.0	1,755,197
	Montgomery	33.8	2,597,167
	Philadelphia	27.9	4,768,489
	Bucks	23.6	1,644,324
	Lehigh	51.5	977,868
	North Hampton	46.1	522,384
N.Y.	Richmond	33.2	648,743
	Kings	49.3	4,279,934
	Queens	56.3	4,012,663
	Manhattan	49.3	7,187,915
	Bronx	58.4	2,146,159